MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2019/2020

BDM2384 – DATABASE MANAGEMENT SYSTEMS

(All sections / Groups)

24 OCTOBER 2019
9.00 a.m –11.00 a.m
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of 5 pages (including cover page) with 4 questions only.
2. Attempt ALL FOUR questions. All questions carry equal marks and the distribution of the marks for each question is given.
3. Please write all your answer in the Answer Booklet provided.

Question 1 (25 Marks)

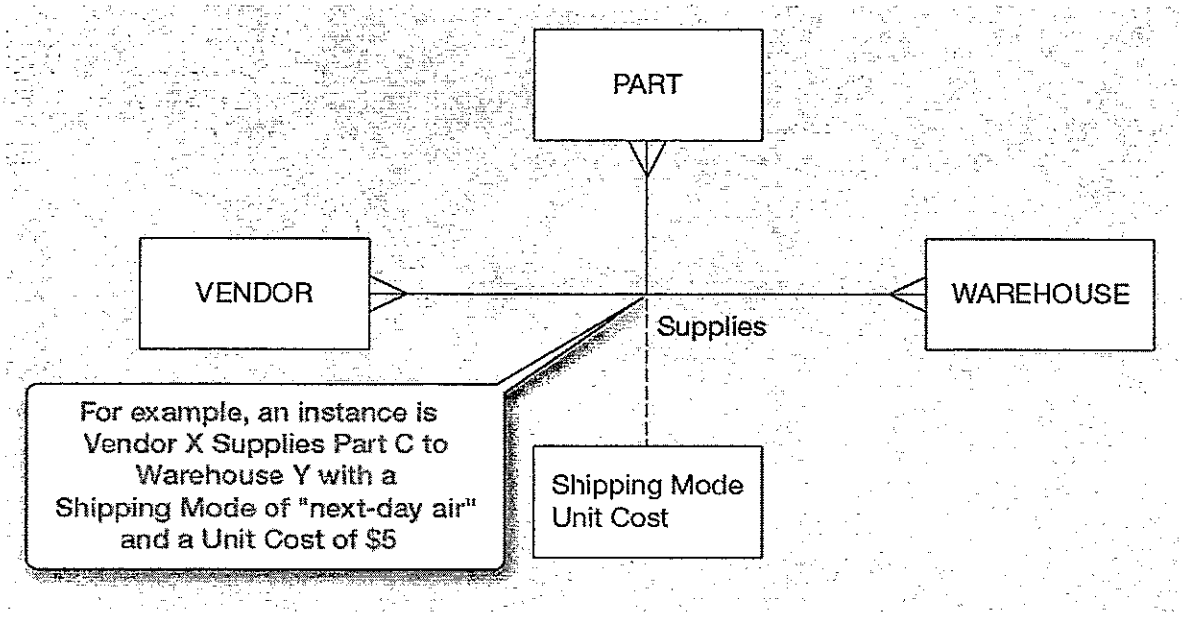
a) Explain how database design and development is carried out with respect to the 5 phases given below. Mention the deliverables of each phases.

(5 x 4 =20 Marks)

i. Planning
ii. Analysis
iii. Design
iv. Implementation
v. Maintenance

b) What is the problem with the given entity-relationship diagram? How do you solve it?

(5 Marks)


PART
VENDOR
WAREHOUSE
Supplies
For example, an instance is Vendor X Supplies Part C to Warehouse Y with a Shipping Mode of "next-day air" and a Unit Cost of $5
Shipping Mode
Unit Cost

Question 2 (25 Marks)

Consider the following requirements
ZAGI Retail Company Sales Department Database will capture data about the following:

- For each **product** being sold: a product ID (unique), product name, and price
- For each **category** of product: category ID (unique) and category name
- For each **vendor**: vendor ID (unique) and vendor name
- For each **customer**: customer ID (unique), name and zip code

Continued...

- For each **store**: store ID (unique) and zip code
- For each **region**: region ID (unique) and region name
- For each **sales transaction**: transaction ID (unique) and date and time of transaction
- Each product is supplied by exactly one vendor.
- Each vendor supplies one or more products.
- Each product belongs to exactly one category.
- Each category contains one or more products.
- Each store is located in exactly one region.
- Each region contains one or more stores.
- Each sales transaction occurs in one store.
- Each store has one or more transactions occurring at it.
- Each sales transaction involves exactly one customer.
- Each customer can be involved in one or more sales transactions.
- Each product is sold via one or more sales transactions.
- Each sales transaction includes one or more products.
- For each instance of a product being sold via a sales transaction, the quantity of sold products is recorded.

Required

a) Show entity names, primary keys, attribute types for each entity.

(10 Marks)

b) Create an ERD to show how you would model this data. Show relationships between the entities and cardinality clearly.

(15 Marks)

Question 3 (25 Marks)

Worker

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
001	Monika	Arora	100000	2014-02-20 09:00:00	HR
002	Niharika	Verma	80000	2014-06-11 09:00:00	Admin
003	Vishal	Singhal	300000	2014-02-20 09:00:00	HR
004	Amitabh	Singh	500000	2014-02-20 09:00:00	Admin
005	Vivek	Bhati	500000	2014-06-11 09:00:00	Admin
006	Vipul	Diwan	200000	2014-06-11 09:00:00	Account
007	Satish	Kumar	75000	2014-01-20 09:00:00	Account
008	Geetika	Chauhan	90000	2014-04-11 09:00:00	Admin

Continued...

Bonus

WORKER_REF_ID	BONUS_DATE	BONUS_AMOUNT
1	2016-02-20 00:00:00	5000
2	2016-06-11 00:00:00	3000
3	2016-02-20 00:00:00	4000
1	2016-02-20 00:00:00	4500
2	2016-06-11 00:00:00	3500

Title

WORKER_REF_ID	WORKER_TITLE	AFFECTED_FROM
1	Manager	2016-02-20 00:00:00
2	Executive	2016-06-11 00:00:00
8	Executive	2016-06-11 00:00:00
5	Manager	2016-06-11 00:00:00
4	Asst. Manager	2016-06-11 00:00:00
7	Executive	2016-06-11 00:00:00
6	Lead	2016-06-11 00:00:00
3	Lead	2016-06-11 00:00:00

a) Write SQL command to create all the three tables shown above. Workder_Ref_ID refers to worker_ID.

(3 x 3 = 9 Marks)

b) Insert first two records to worker table

(2 Marks)

c) Write an SQL query to fetch unique values of DEPARTMENT from Worker table.

(2 Marks)

d) Write an SQL query to print all Worker details from the Worker table order by FIRST_NAME Ascending and DEPARTMENT Descending.

(2 Marks)

e) Write an SQL query to print details for Workers with the first name as "Vipul" and "Satish" from Worker table.

(2 Marks)

f) Write an SQL query to print details of Workers with DEPARTMENT name as "Admin".

(2 Marks)

Continued...

g) Write an SQL query to print details of the Workers whose FIRST_NAME ends with 'a'

(2 Marks)

h) Write an SQL query to print details of the Workers whose SALARY lies between 100000 and 500000.

(2 Marks)

i) Write an SQL query to print details of the Workers who have joined in Feb'2014.

(2 Marks)

Question 4 (25 Marks)

a) Describe conceptually how big data differs from traditional relational database management systems.

(5 Marks)

b) Discuss the four key terms (subject-oriented, integrated, time-variant, and nonupdateable) related to data warehousing.

(4 Marks)

c) Explain the difference between operational and informational systems as well as the primary factors that contribute to the need for separation.

(10 Marks)

d) Data analytics are typically divided into descriptive, predictive, and prescriptive Describe each category and provide an example question that each category would address.

(6 Marks)

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